

ABSTRACT

[0021] A high-K thin film patterning solution is disclosed to address structural and process limitations of conventional patterning techniques. Subsequent to formation of gate structures adjacent a high-K dielectric layer, a portion of the high-K dielectric layer material is reduced, preferably via exposure to hydrogen gas, to form a reduced portion of the high-K dielectric layer. The reduced portion may be selectively removed utilizing wet etch chemistries to leave behind a trench of desirable geometric properties.